

## SIXTY-FIRST SESSION OF THE IPCC САТЕЛИТНА ПРОГРАМА

### Climate risks in the Black Sea region

### IPCC61 Satellite Science Conference

## AGENDA

### Day one – Black Sea region - climate characteristics and changes

	Thursday, July 25, 2024
08:30 - 9:15	Registration
9:15 - 09:30	Opening  Academic Julian Revalski, President of the Bulgarian Academy of Science Peter Dimitrov, Minister of Environment and Water Miroslav Borshosh, Chair of the Permanent Committee on Culture, Education, Science and Cultural Diversity with Sofia City Council
9:30 – 9:45	Sir Jim Skea, Chair of the Intergovernmental Panel on Climate Change (IPCC), Keynote Speech
10:00 - 10:45	Climate Characteristics of the Black Sea Region



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	<ol style="list-style-type: none"> <li>1. Current climate variations and future trends in Bulgaria - Lilia Bocheva, Krastina Malcheva, Hristo Chervenkov (NIMH)</li> <li>2. General climatic characteristics of the Bulgarian Black Sea coast, and non-Bulgarian &amp; Caspian Sea coast - V.Ivanova-(NIMH), Zoya Mateeva (CAWRI-BAS)</li> <li>3. Climate projections in the 21st century for the Black Sea region - Elisaveta Peneva (SU-FPh).</li> </ol> <p>Moderator: Lilia Bocheva (NIMH)</p>
10:45 - 11:45	<p>Evidence of climate change impact in the Black Sea</p> <ol style="list-style-type: none"> <li>1. Water masses in the Black Sea: formation processes and climate trends – Emil Stanev (SU), keynote speech</li> <li>2. Spatio-temporal variability of the Black Sea Cold Intermediate Layer properties derived from in situ data – Nadezda Valcheva (IO-BAS)</li> <li>3. Black Sea Rim current and mesoscale eddies variability – Elisaveta Peneva (SU-FPh)</li> </ol> <p>Moderator: Nikolay Valchev (IO-BAS)</p>
11:45 - 12:15	Coffee break
12:15– 13:00	<p>Dimensions of Climate Change in the Black Sea</p> <ol style="list-style-type: none"> <li>1. Severe Storms in the Western Black Sea in the last 100 years Vasko Galabov (NIMH)</li> </ol>



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	<ol style="list-style-type: none"> <li>Black Sea freezing and winter severity in 20th and beginning of 21st century, Elisaveta Peneva (SU-FPh)</li> <li>The climate change impact on the wave regime in the western part of the Black Sea and potential risks for the development of tourism, Peter Nojarov (CAWRI-BAS)</li> </ol> <p>Moderator: Elisaveta Peneva (SU-FPh)</p>
13:00-14:00	Lunch
14:00 – 14:30	<p>Panel discussion: The Black Sea as a model for studying future climate risks to the world ocean and regional seas - Nikolay Valchev, Ekaterina Bachvarova, Elisaveta Peneva, Lilia Bocheva.</p> <p>Moderator: Emil Stanev (SU)</p>
14:30 – 15:45	<p>Modern methods of gathering data on climate change. New technologies, mathematical modelling, shortages.</p> <ol style="list-style-type: none"> <li>Present and Projected Regional Climate Simulations over Black Sea Region - Vladimir Ivanov (NIGGG-BAS)</li> <li>SAR data for Monitoring of Geo and Climatic Risks in the Black Sea Region - Hristo Nikolov (SRTI-BAS)</li> <li>Long-term studies of wind and turbulence profiles at the Bulgarian Black Sea coast - Ekaterina Batchvarova (CAWRI-BAS)</li> <li>Digital Twins - Data Policy for creating and using - Temenuzhka Spasova (SRTI-BAS)</li> </ol>



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	<p>5. Integrated application of geo-information technology solutions in mapping, modelling and assessment of climate-triggered natural hazards and risks – Stelyan Dimitrov (SU-FGG)</p> <p>Moderator Georgi Gadzhev (NIGGG-BAS)</p>
15:45 – 16:15	Coffee break
16:15 – 17:00	<p>The Black Sea and the World Ocean. Sea level rise, salinity change, other changes</p> <ol style="list-style-type: none"><li>1. The response of enclosed and semi-enclosed seas to sea-level change: The case of the Black and Caspian Seas - Emil Stanev (SU)</li><li>2. Water transport in the Bosphorus Strait - an indicator of recent climate change - Elisaveta Peneva (SU)</li></ol> <p>Moderator: Emil Stanev (SU)</p>
19:00 – 21:00	Cocktail, Sofia University, Botanic Garden



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**Day two** - The Black Sea in a wider perspective - connected rivers and seas, perspective on the Caspian Sea

	Friday, July 26, 2024
9:30 – 10:30	<p>Climate change and the response of the Black Sea ecosystem, emphasis on fish/shellfish and aquaculture resources</p> <ol style="list-style-type: none"> <li>1. Effects and responses of fishes and aquaculture resources to the climatic changes – View to the Bulgarian coast of The Black Sea - Violin Raykov, I.Zlateva, V. Mihneva, M. Yankova, P. Ivanova, N.Dzembekova, R.Bekova, Todorova V., M. Panayotova, K. Stefanova, E. Stefanova, R.Mavrodieva, N.Slabakova</li> <li>2. Global climate changes and the stress response paradigm: the Bulgarian Black Sea fish case – Albena Alexandrova, Violin Raykov &amp; Nesho Chipev</li> <li>3. Ecopath with Ecosim (EwE) - tool for climate scenarios evaluation - Georgi Daskalov &amp; Yoana Georgieva</li> </ol> <p>Moderator: Violin Raykov (IO-BAS)</p>
10:30 – 11:15	<b>Black Sea and the rivers. An emphasis on the hydrological processes of the Bulgarian Black Sea basin.</b>



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	<ol style="list-style-type: none"><li>1. Studies, analysis and assessment of river flow in the Black Sea basin -Yordan Dimitrov, NIMH; authors: Plamen Ninov, Yordan Dimitrov, Nevyana Todorova</li><li>2. Floods and Climate Variations: Modelling extreme hydrological events - Snezhanka Balabanova, NIMH, authors: Snezhanka Balabanova, Silviya Stoyanova, Vesela Stoyanova, Georgy Koshinchanov, Valeriya Yordanova</li></ol> <p>Moderator: Silviya Stoyanova (NIMH)</p>
11:15 – 11:45	Coffee break
11:45 - 12:30	<p><b>Black Sea and coastal waters (impact, risks, adaptation)</b></p> <ol style="list-style-type: none"><li>1. The Danube River basin and Western Black Sea coast: risks related to invasive alien species and climate change - T.Trichkova, P. Ivanova, V.Raykov, M.Skolka, B.Csányi, Y. Kvach, V. Todorova, K. Stefanova, N. Dzhebekova, E.Stefanova, H. Kalcheva, M. Paunović- presented by T. Trichkova – IBER-BAS.</li><li>2. Climate change scenarios and supposed impacts on the structure, functions and ecosystem services of coastal benthic ecosystems along the SW Black Sea coast. D. Berov, S. Klajn and V. Karamfilov - presented by Dimitar Berov - IBER-BAS.</li><li>3. Influence of climate change on summer phytoplankton in the Bulgarian Black Sea coastal area. N. Nikolova, D. Klisarova, D. Gerdzhikov, S. Matev - presented by N. Nikolova - FGG-SU.</li></ol>



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	Moderator: Ventsislav Karamfilov (IBER-BAS)
12.30 – 13:15	<p><b>Adaptation to climate change</b></p> <ol style="list-style-type: none"><li>1. Climate change adaptation through application of nature-based solutions in coastal waters - N. Valchev, P. Eftimova, E. Hineva, N. Andreeva, B. Prodanov (IO-BAS).</li><li>2. Innovative Approach for Wetland Monitoring in Black Sea Region, K. Radeva, E. Batchvarova, S. Kirilova, L. Filchev (SRTI-BAS, CAWRI-BAS, UACEG).</li><li>3. DaWetRest - Danube Wetlands and floodplains Restoration through systemic, community-engaged, and sustainable innovative actions, E. Batchvarova and B. Koulov (CAWRI-BAS).</li><li>4. Project "Region for Climate" - Earth observation services for smart climate adaption, K.Iliev (CNSDR /RST-TTO).</li><li>5. Nature-based solutions against coastal hazards - Black Sea (video), J. Staneva (Helmholtz-Zentrum Hereon).</li></ol> <p>Moderator: Ekaterina Batchvarova (CAWRI-BAS)</p>



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13:15 – 14:15	Panel discussion: Policy strategies related to nature restoration as a means of adapting to climate change (TBD).  Moderator: Julian Popov
14:15	<b>Closing and networking lunch</b>

### Posters sessions

1. Z. Mateeva: "Climate vulnerability and climate risk - methodological aspects and research in Bulgaria" (CAWRI-BAS)
2. Z. Mateeva: "Climate resources of the Bulgarian Black Sea coast - bioclimatic, agroclimatic and energy-climatic aspects" (CAWRI-BAS)
3. S. Petrova, E. Ilieva, N. Doktorova, E. Peneva: "Diurnal variation of lightning over Black Sea and its relationship with Sea Surface Temperature" (SU)
4. M. Gouveia, E. Peneva: "The climatological Lagrangian Coherent Structures in the Black Sea"
5. I. Gancheva, L. Dimova, E. Peneva: "Analysis of hyperspectral images from the PRISMA satellite mission in the Black Sea coastal area near the Danube delta" (SU)
6. T. Ilieva, E. Peneva: "Investigating the changes in the seasonal cycle of surface temperature in South-Eastern Europe" (SU)
7. L. Nikolova, V. Galabov: "Numerical hindcast of storm surges in the Black Sea" (NIMH)
8. L. Nikolova, E. Peneva: "Analysis of the Black Sea currents near the Bulgarian coast based on a numerical reanalysis" (SU)
9. G. Koshincharov, S. Stoyanova: "Variability of Fakiyska river flow in the context of climate changes"







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10. V. Stoyanova, V. Yordanova: "Climate change and flood hazard mapping" (NIMH)
11. L. Valcheva, H. Kirova, E. Georgieva, E. Hristova: "Precipitation Chemistry at the Southern Bulgarian Black Sea Coast: some results for the period 2011 – 2020" (NIMH)
12. B. Veleva, E. Yordanova, N. Vankova, E. Hristova: "Atmospheric Total Beta Activity Characteristics along the Bulgarian Black Sea Cost" (NIMH)
13. V. Ivanova: "Sea State Estimation Based on Instrumental Measurements in Varna Bay for the Period 2021 – 2023" (NIMH)

